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ABSTRACT OF THE INVENTION

A power converter that can be used in a vehicle equipped with an electrical motor provides power to both the electrical motor and other, auxiliary loads, such as a headlamp, that require a different voltage. The power converter includes a first DC power supply that generates a first voltage equivalent to the voltage required by the auxiliary loads and a second DC power supply, connected in series with the first DC power supply, that generates a differential voltage, where the sum of the differential voltage and the first voltage is the voltage required to drive the electrical motor. A DC-DC converter is connected to the second power supply and converts the differential voltage to the voltage required to drive the auxiliary loads.

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